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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,576	10/31/2002	Jeffrey Thomas Remillard	202-1293	9752

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EXAMINER

TSAI, CAROL S W

ART UNIT PAPER NUMBER

2857

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/065,576

Applicant(s)

REMILLARD ET AL.

Examiner

Carol S Tsai

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 18 is objected to because of the following informalities:

In claim 18, line 5, "light pulse; and," should read - - light pulse; - -

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 7, 9, 11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 5,354,983 to Juds et al.

With respect to claims 1-3, 11, and 13, Juds et al. disclose a system for detecting an object, comprising: a light source (emitter apparatus 24 shown on Fig. 3) generating a light pulse, said light pulse being emitted (see col. 5, lines 10-14 and lines 42-50); a light detector (detector apparatus 26 shown on Fig 3) configured to receive a reflection of said pulse (see col. 5, lines 14-22 and lines 50-58); and, a controller (controller 32 shown on Fig. 3) operably connected to said light source and said detector (see col. 5, lines 3-9), said controller configured to indicate a presence of the object from said received light pulse, said controller further configured to adjust

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sensitivity for detecting the object based on an elapsed time from said emission (see col. 4, line 5 to col. 5, line 41; col. 9, lines 8-43; and col. 10, line 47 to col. 11, line 31).

As to claim 4, Juds et al. also disclose increasing a signal gain over said elapsed time, said indicating step including: multiplying said power level of said received light pulse by said gain to obtain a first value (see col. 9, lines 29-43); and, determining said presence of the object when said first value is greater than a predetermined threshold (see col. 5, lines 23-41).

As to claim 7, Juds et al. also disclose a method for detecting an object, comprising: emitting a light pulse (see col. 5, lines 10-14 and lines 42-50); receiving a reflection of said light pulse (see col. 5, lines 14-22 and lines 50-58); indicating a presence of the object from said received light pulse (see col. 4, lines 29-33); and, increasing sensitivity of said indicating step when said received light pulse is received at an elapsed time from said emission that is greater than a predetermined time (see col. 10, line 47 to col. 11, line 31).

As to claim 9, Juds et al. disclose a method for detecting an object, comprising: emitting a light pulse (see col. 5, lines 10-14 and lines 42-50); receiving a reflection of said light pulse (see col. 5, lines 14-22 and lines 50-58); indicating a presence of the object from said received light pulse (see col. 4, lines 21-29); and, decreasing sensitivity of said indicating step when said received light pulse is received at an elapsed time from said emission that is less than a predetermined time (see col. 9, lines 8-43).

4. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 4,926,170 to Beggs et al.

Beggs et al. disclose an article of manufacture, comprising: a computer storage medium (read only memory (not shown)) having a computer program encoded therein for detecting an object (see col. 6, lines 36-57; col. 8, lines 48-61; and col. 9, lines 6-20), said computer storage medium comprising: code for inducing a light transmitter to emit a light pulse (see Abstract, lines 2-3 and lines 5-8; col. 1, lines 65-68; col. 4, lines 35-39; col. 5, lines 1-20; and col. 6, line 58 to col. 7, line 15); code for storing values indicative of a reflection of said light pulse (see Abstract, lines 3-5; col. 1, line 68 to col. 2, line 14; col. 4, lines 40-56; and col. 5, lines 21-35); code for indicating a presence of the object from said stored values (see Abstract, lines 17-20; col. 2, lines 14-21; and col. 4, line 57 to col. 5, line 65); and, code for adjusting sensitivity for detecting the object based on elapsed time from said emission (see col. 5, lines 57-68 and col. 9, lines 29-58).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juds et al. in view of U. S. Patent No. 5,485,155 to Hibino.

As noted above, with respect to claims 5 and 17, Juds et al. disclose the claimed invention, except for a first sensitivity value at a first elapsed time and a second sensitivity value

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at a second elapsed time after said first elapsed time, said second sensitivity being greater than said first sensitivity.

Hibino teaches a first sensitivity value at a first elapsed time and a second sensitivity value at a second elapsed time after said first elapsed time, said second sensitivity being greater than said first sensitivity (see col. 2, line 61 to col. 3, line 50 and col. 5, line 54 to col. 6, line 14).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Juds et al.'s method to include a first sensitivity value at a first elapsed time and a second sensitivity value at a second elapsed time after said first elapsed time, said second sensitivity being greater than said first sensitivity, as taught by Hibino, in order that true distance can be determined when the difference between the first and second distances is larger than the predetermined value (see col. 3, lines 8-10).

7. Claims 6, 8, 10, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juds et al. in view of U. S. Publication 2003/0222772 to Laufer.

With respect to claims 6, 8, 10, 12, and 14, Juds et al. disclose reflecting said light pulse outwardly from said light reflector (see Fig. 2)

Juds et al. do not disclose transmitting said light pulse to a polymeric light reflector.

Laufer teaches transmitting said light pulse to a polymeric light reflector (see paragraph 0009).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Juds et al.'s method to include transmitting said light pulse to a polymeric light reflector, as taught by Laufer, in order to essentially isolate signals

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transmitted/received from environment lights, so as to minimize distortion of the signals (see Laufer, lines 3-6 of paragraph 0009).

8. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juds et al. in view of JP 05297141 to Azusazawa et al.

As noted above, with respect to claims 15 and 16, Juds et al. disclose the claimed invention, except for a near infrared diode laser/a near infrared light detector.

Azusazawa et al. teach a near infrared diode laser/a near infrared light detector (see Constitution, lines 1-8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Juds et al.'s method to include a near infrared diode laser/a near infrared light detector, as taught by Azusazawa et al., in order that highly precise distance information by recognizing the image information obtained by a pick-up means, and emitting the reflected light of the light beam projected toward an object can be provided (see Azusazawa et al., Purpose, lines 2-4).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Stephan et al. disclose a night vision system for a vehicle including a pulsed light source for illuminating a region proximate the vehicle, the light source operating at a predetermined pulse timing.

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Stam et al. disclose a system and method of automatically controlling vehicle headlamps including an image sensor and a controller to generate headlamp control signals.

Chapdelaine et al. disclose a monitoring system for use in detecting the presence of an obstacle in or proximate to an aperture.

Dong discloses a distance sensing system employing an optical triangulation system and a position sensitive device (PSD).

Fukuhara et al. disclose a low-cost compact radar apparatus measuring a distance to a target and the relative speed of the target.

Ruckh et al. disclose a method for detecting objects located in or entering into an area to be monitored with a device including a transmitter, a receiver and an evaluation unit.

Akasu discloses a distance measuring apparatus having a clock generating element, a light emitting element, a light receiving element, a sample pulse generating element, a sample hold element and a processing element.

Takahashi et al. disclose a voltage detecting device for detecting voltages in an object under test including an electro-optic material covering a plurality of parts of the object under test; the refractive index of the electro-optic material being variable according to an applied voltage.

Aoshima et al. disclose a voltage detector using an electro-optic material whose refractive index is changed by a voltage developing in a selected area of an object under test, a light beam emitted from a light source is applied to a beam splitter, where it is split into a light beam advancing along a reference optical path and a light beam advancing along an optical path

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extended to an optical path length changing means made of the electro-optic material, and the light beams are returned from the reference optical path and the optical path length changing means after reflection to the beam splitter, where they are caused to interference with each other to provide an output light beam which is applied to a detector.

Endo discloses optical pulse radar for an automotive vehicle of heterodyne detection-type which can detect an object ahead of the vehicle with an improved S/N ratio even under the worst detection conditions in which sunlight or a strong headlight beam from a car is directly incident thereupon.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. Tsai whose telephone number is (703) 305-0851. The examiner can normally be reached on Monday-Friday from 7:30 AM to 4:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (703) 308-1677. The fax number for TC 2800 is (703) 308-7382. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2800 receptionist whose telephone number is (703) 308-1782.

In order to reduce pendency and avoid potential delays, Group 2800 is encouraging FAXing of responses to Office actions directly into the Group at (703) 308-7382. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the

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examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2800 will be promptly forwarded to the examiner.

A handwritten signature in black ink, appearing to read 'Carol S. W. Tsai'.

Carol S. W. Tsai
Patent Examiner
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01/03/04